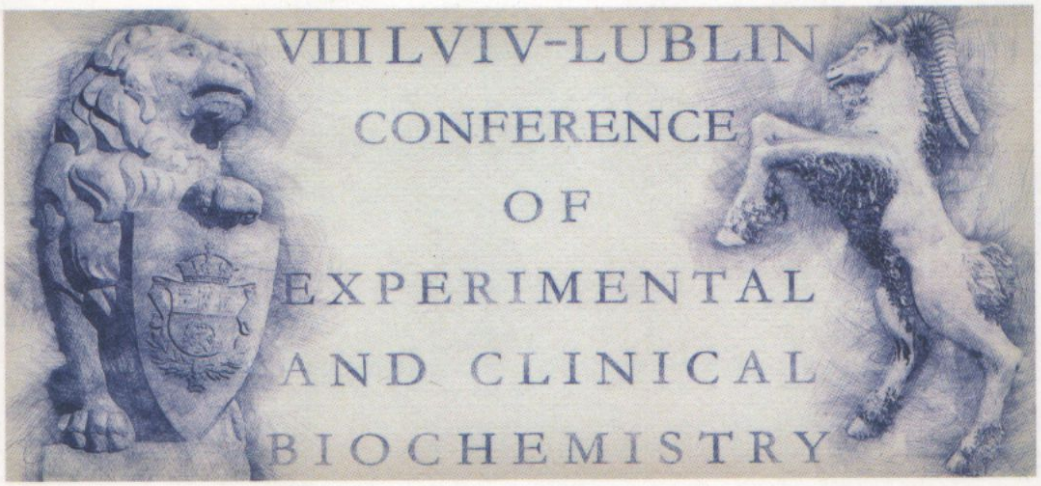

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THE EFFECTS OF CORVITIN AND EPLERENONE ON THE ACTIVITY OF GELATINASES AND GLYCATION OF PROTEINS IN RATS WITH ISOPRENALINE-INDUCED MYOCARDIAL DAMAGE

Tkachenko V.[1], Shauls'ka O.[1], Pats N.[2], Shevtsova A.[1]

[1] Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine, Dnipro, Ukraine;
[2] Grodno State Medical University, Grodno, Belorussia
paronic@ukr.net

The goal of this work was to study the impact of corvitin (C - soluble form ofquercetin) and eplerenone (E) on the behavioral reactions, the activity of gelatinases A and B and the level of advanced glycation end products (AGEs) using the model of experimental myocardial damage in rats.

Materials and Methods. Wistar male rats were divided into 4 groups with10 animals in each group. The group 1 consisted of the native animals. The isoprenaline-induced model of myocardial damage (IIMD) was used in the other groups. The group 2 consisted of the animals with IIMD, animals of the third and fourth groups received C and E, respectively. Behavioral activity of animals was studied during the experiment using the open field test. At the end of the experiment animals were decapitated according to ethical standards. The myocardium was examined by histology and by electrocardiography. Activity of gelatinases A and B in plasma and heart homogenates was determined using enzyme-zymography. The level of AGEs in plasma was analyzed by quantitative autofluorescence, using wave length of excitation 365 nm and length of absorbance 460 nm.

Results. Pathological changes of the heart muscle condition in animals of the 2nd group were confirmed by ECG In addition, decrease in locomotor behavioral activity and increase in the number of boluses were found in this group. The level of AGEs in blood of the animals with IIMD was significantly increased comparatively to the control group (0,909±0,036 mg/ml and 0,694±0,029 mg/ml, respectively). No significant changes in activity of pro- and mature forms of gelatinase A after the ischemia was observed, however, activity of gelatinase B was significantly increased. The use of C and E led to the normalization of physiological parameters, slight decrease of the AGEs level and to multidirectional changes in activity of latent and mature gelatinases, but the last did not correlate with the levels of AGEs and physiological parameters in experimental animals.

Conclusion. The regulation of activity of matrix-degradating enzymes and inhibition of non-enzymtic glycation may have the cardioprotective effects of corvitin and eplerenone.